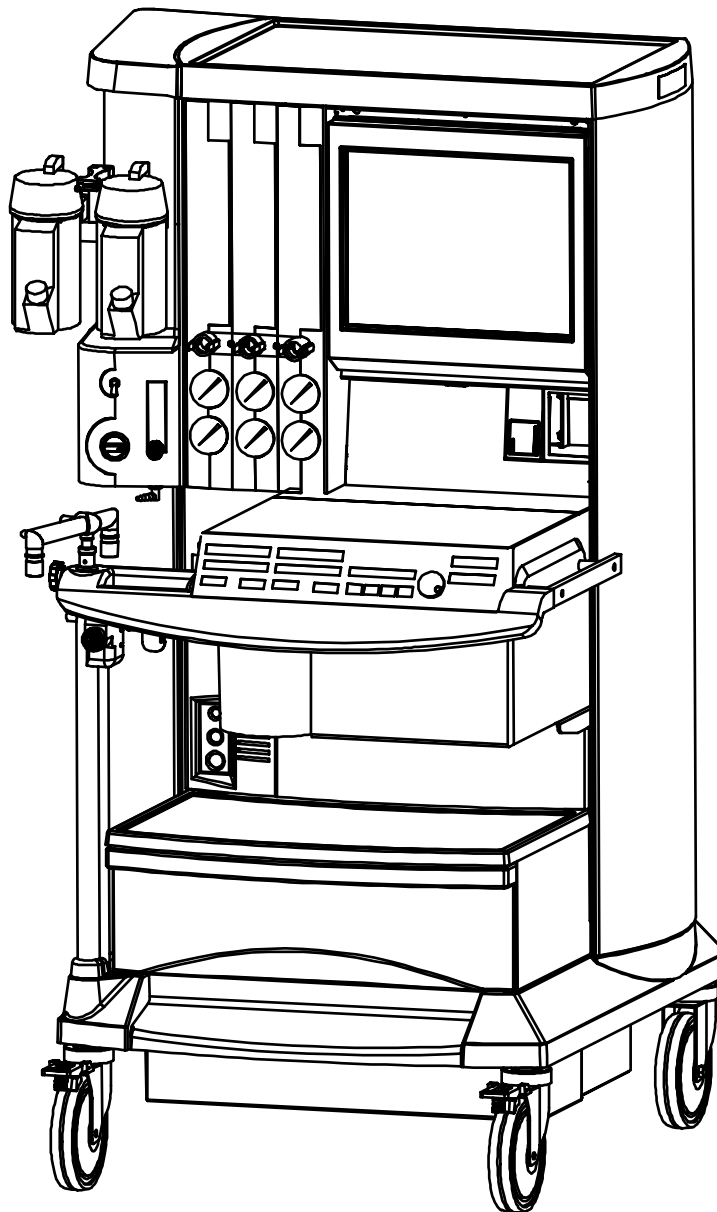


Part Number: 4115159  
Rev: C  
Date: 31 July 2003  
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# Narkomed 6000 Series



## Operator's Guide to Troubleshooting



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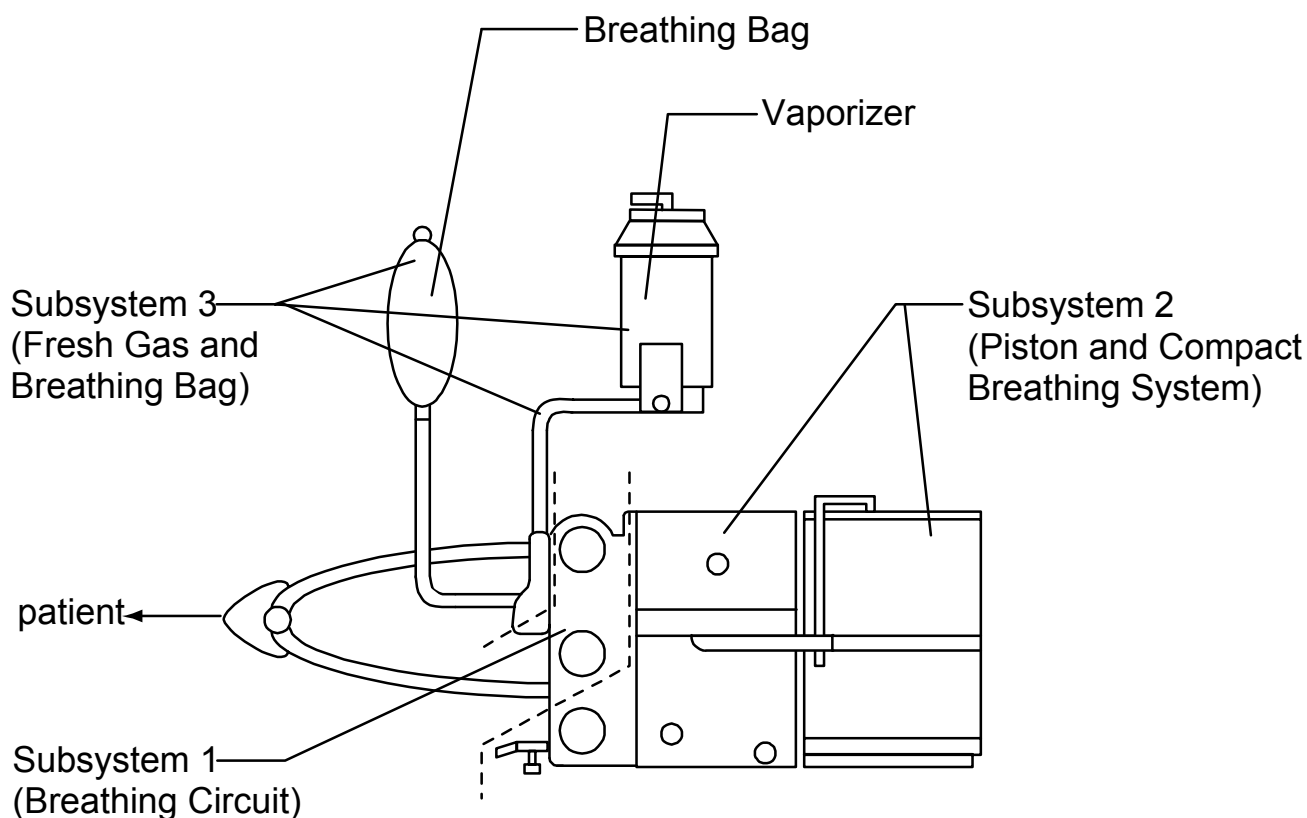
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# If a system leak is detected...



## If a Subsystem 1 leak is reported, check the following in order of priority:

- Patient hoses and Y-piece are tightly connected and not leaking.
- Ensure that the ultrasonic flow sensor is tightly secured to the expiratory outlet. The cable to the flow sensor should be above the sensor lock bar, not trapped underneath it.
- Remove the ultrasonic flow sensor assembly and connect the breathing hose directly to the breathing system to check for flow sensor leakage.

(continued on next page)

- Tighten the inspiratory valve dome. Remove the O<sub>2</sub> sensor assembly and insert the plug to check for leaks in the O<sub>2</sub> sensor.
- Ensure that the airway pressure sensor hose is connected properly at the breathing circuit and interface panel.
- Verify that the gas sampling line connections are tight and free of cracks or damage.

**If a Subsystem 2 leak is reported, check the following in order of priority:**

- Remove the absorber canister and verify that the lip of the canister and mating surface on the breathing system are free of dust and granules.
- Ensure that the expiratory valve dome is screwed tightly onto the expiratory valve.
- Visually inspect the gaskets and diaphragm valves within the compact breathing system and piston assembly for possible leaks or damage.

**If a Subsystem 3 leak is reported, check the following in order of priority:**

- Verify that the fresh gas hose, breathing bag, and breathing bag hose are secured tightly and are leak free.
- Verify that the vaporizer fill and drain ports are tight and that the vaporizers are securely mounted.

## If the ventilator self-test cannot be cancelled...

- The ventilator display indicates **COMPLETE TEST**. At this point, a complete test must be performed before the ventilator will operate. The self-test can only be cancelled (10) times before a complete self-test will be required. If the ventilator detects certain faults during testing, it may not be possible to cancel the self-test.
- Turn the system power switch to **STANDBY** and wait until the ventilator display is no longer illuminated.
- Turn the system power switch to **ON** and follow the prompts on the ventilator to complete the self-test.

## **If battery failure during self-test causes unit to display a conditionally functional message...**

*Please check the following items before calling for technical assistance:*

- Verify that all of the anesthesia machine circuit breakers, located on the lower rear section of the machine, are engaged (pushed in). If there are any disengaged breakers (popped out), the cause of the fault should be investigated.
- Ensure that the Narkomed 6000 Series system is plugged into a live AC receptacle.
- Backup battery may not be fully charged. From a fully discharged state, the backup battery requires approximately 12 hours for recharging with the unit plugged into a live AC receptacle.

*If you have checked all of the above and the battery test still fails the self-test, follow the directions on the back cover of this guide.*



## If the oxygen monitor will not calibrate to 21%...

*Please check the following items before calling for technical assistance:*

- Verify that the oxygen sensor connector is plugged into the anesthesia machine sensor interface panel.
- Verify that there is an oxygen sensor capsule in the sensor housing.
- Expose the oxygen sensor to 21% oxygen (room air) and allow to stabilize at least five minutes; then attempt an O<sub>2</sub> calibration.
- Substitute a properly functioning oxygen sensor from another machine or spare inventory.

**Note:** *Calibration errors may occur when changing sensors.*

*If your oxygen monitor still fails to calibrate, please follow the directions on the back cover of this guide.*

## Leak and compliance test is not initiated when [Test] button is pressed...

*Please check the following items before calling for technical assistance:*

- While in Ventilator Standby status, press and hold the **[Test]** button for several seconds until the green LED stays lit.
- If the message **Invalid** is displayed when the **[Test]** button is pressed, press the ventilator **[Standby]** button and verify that the **STANDBY** message is displayed on the ventilator control panel. Then press and hold the **[Test]** button again.

*If the ventilator fails to begin the test, please follow the directions on the back cover of this guide.*

## If monitored tidal volumes do not match the volumes I preset...

**Note:** *It is possible to have a 15% deviation between the monitored volume and the preset volume. This is because there is a possible 5% deviation on the ventilator and a 10% deviation in monitored data.*

- Ventilator may be in the Pressure Mode of ventilation. In the Pressure Mode of ventilation a target pressure (Pset) is set and achieved regardless of the volume required to reach this pressure.
- Verify that **Pressure Limit** is not displayed on the ventilator control panel or in the alarm window. If it is, the ventilator is limiting airway pressure to the Pmax value and will not deliver the preset tidal volume.
- Verify that the **Fresh gas low** message is not displayed on the ventilator control panel or in the alarm window.
- If in Volume or SIMV mode and measured tidal volume (Vt) is lower than desired, verify that the Vt is set properly on the ventilator; check for airway leaks or for the appearance of the Breathing Hose Compliance Limit dialog box.
- Verify that the pilot line from the breathing system is securely attached to the interface panel and free of leaks.
- Check the breathing system for leaks.

*If you have checked all of the above items and the volumes still do not agree, follow the directions on the back cover of this guide.*

## If the message **VOL SENS ERR** is displayed in the alarm window...

*Please check the following items before calling for technical assistance:*

- Remove electronics box and transducers from flow housing. Check transducers for moisture buildup. Remove all large droplets from the transducer ports and faces by patting dry with a soft cloth. Reinsert transducers into flow housing. Slide electronics box over transducers and flow housing assembly, making sure it clicks into place.
- Substitute a working ultrasonic flow sensor from another machine or spare inventory.

*If you have checked all of the above items and the **VOL SENS ERR** message is still displayed, follow the directions on the back cover of this guide.*

## If the message **REVERSE FLOW** is displayed in the alarm window...

*Please check the following items before calling for technical assistance:*

- Clean the expiratory valve, removing excessive moisture and any foreign material.
- Verify that the surface of the valve disc in the expiratory valve is smooth, clean, and free of foreign materials.
- Verify that the valve seat in the expiratory valve is smooth and free of foreign materials.
- Remove electronics box and transducers from flow housing. Check transducers for moisture buildup. Remove all large droplets from the transducer ports and faces by patting dry with a soft cloth. Reinsert transducers into flow housing. Slide electronics box over transducers and flow housing assembly, making sure it clicks into place.

*If you have checked all of the above items and the **REVERSE FLOW** message is still being displayed, follow the directions on the back cover of this guide.*

## **If the breathing pressure waveform is not present or the monitor is displaying a pressure alarm condition...**

*Please check the following items before calling for technical assistance:*

### **No waveform present:**

- Verify that the breathing pressure pilot line is securely connected to the breathing system and the sensor interface panel.
- Verify that the patient connections to the anesthesia system are tight and securely connected to the anesthesia system.
- Verify that pressure can be maintained in reservoir bag with Y-piece occluded in Manual Mode.

### **Elevated baseline:**

- Ensure that the PEEP value is set correctly. The baseline should read within 3 cmH<sub>2</sub>O of the PEEP setting.
- Ensure that the breathing hoses and scavenger system are free of excessive moisture and partial occlusions.

### **THRESHOLD LOW alarm message** (in breathing pressure parameter box):

- Adjust the alarm threshold by pressing the Auto Pressure Thrshld key on the taskbar.

### **CONTINUOUS PRES alarm message:** (refer to page 14 for details)

*If the problem persists, follow the directions on the back cover of this guide.*

## If the message **LINE BLOCK** is displayed in the alarm window...

*Please check the following items before calling for technical assistance:*

- Ensure that the water trap is not full of fluid. If necessary, empty the water trap and reinstall.
- If the GAP-2 gas analysis pod (on the Narkomed 6400 only) has just been replaced, it's possible that the exhaust hose on the rear of the pod was kinked when it was inserted into the machine. Remove the pod and reinstall, ensuring that the exhaust hose is fully seated on the hose barb and that it is not bent going in.
- Remove the water filter (on Narkomed 6000 only), water trap, and sample line from the CO<sub>2</sub>/ Agent interface panel, and ensure that a **LINE BLOCK** message is not displayed in the alarm window. If a **LINE BLOCK** message continues to be displayed, follow the directions on the back cover of this guide.
- Reattach the water filter (on Narkomed 6000 only), water trap, and the sample line one at a time. The component in need of replacement will cause a **LINE BLOCK** message to be displayed.

*If the problem persists, follow the directions on the back cover of this guide.*

## If the monitor is displaying low CO<sub>2</sub>/Agent readings...

**Note:** *During low flow procedures, monitored agent concentrations may be lower than the concentrations set on the vaporizer. To test that vapor is being delivered correctly, increase fresh gas flow and verify that inspired agent concentration approaches the set vapor concentration after a few minutes.*

*Please check the following items before calling for technical assistance:*

- Ensure that the sample line is securely attached at both ends.
- Ensure that water trap reservoir is not full; empty if necessary.
- Occlude the end of the sample line to ensure that a **LINE BLOCK** message can be generated within 15 seconds. If a **LINE BLOCK** message cannot be generated, replace the sample line (and water filter, if on the Narkomed 6000).
- If only agent readings are low, check for leak at vaporizer, fresh gas hose, or reservoir bag.
- Check agent level.
- Occlude the interface panel and ensure that a **LINE BLOCK** message can be generated within 15 seconds. If a **LINE BLOCK** cannot be generated, follow the directions on the back cover of this guide.

**Warning:** Excessively dry absorbent can result in the breakdown of inhalation anesthetics. If lower than expected agent concentration is displayed on the monitor (especially with normal CO<sub>2</sub> and N<sub>2</sub>O readings), the absorbent may need to be replaced.

*If low readings persist, follow the directions on the back cover of this guide.*



## If the monitor is displaying high inspiratory CO<sub>2</sub> levels...

**Note:** *If the patient inhales during the expiratory cycle of the ventilator, a “dip” will occur in the CO<sub>2</sub> waveform and can be interpreted as a real breath with elevated inspiratory CO<sub>2</sub>.*

*Please check the following items before calling for technical assistance:*

- Ensure that the CO<sub>2</sub> absorbent is fresh.
- Verify that the metal sieve insert (screen) in the absorber canister is present and not damaged.
- Verify that the fresh gas hose connection to the breathing system is connected properly and not occluded.
- Ensure that the fresh gas flow is set correctly.
- Verify appropriate airway pressure and tidal volume measurements.
- Ensure that the expiratory valve disk is not chipped or cracked.
- Check patient circuit for leaks.
- Check patient circuit for excessive dead space.
- Check gas analysis sample water separator and hose for partial occlusion.

*If you have checked all of the above and high readings still persist, follow the directions on the back cover of this guide.*

## The message **CONTINUOUS PRES** is displayed in the alarm window...

**Note:** *This is a normal message displayed during a ventilator leak and compliance test.*

*Please check the following items before calling for technical assistance:*

- Verify that the breathing circuit is not occluded and is free of obstructions (kinked hoses, water in hoses, etc.)
- Ensure that the pressure threshold setting is higher than the current PEEP setting. To adjust, press the **[Auto Pressure Thrshld]** key on the taskbar.
- If in the Manual/Spontaneous Mode, check the pressure limit setting on the APL valve and adjust as necessary to achieve the desired pressure.
- Verify that the APL valve is not set in the Manual position if spontaneous patient breathing is desired.

*If the problem persists, follow the directions on the back cover of this guide.*

## If the message **AGENT MIX** is displayed in the alarm window or in the parameter box...

*The AGENT MIX message is displayed on the Narkomed 6000 and the Narkomed 6400 under the conditions described in the table below:*

Agent Condition	Narkomed 6000 Response	Narkomed 6400 Response
Single agent detected	Monitor displays inspired and expired agent concentrations.	Monitor displays inspired and expired agent concentrations.
Two agents detected	<ul style="list-style-type: none"> <li>AGENT MIX advisory displayed in <b>alarm window</b></li> <li>monitor displays I/E concentrations of primary agent</li> </ul>	<ul style="list-style-type: none"> <li>no AGENT MIX alarm displayed</li> <li>monitor displays I/E concentrations of both primary and secondary agents</li> </ul>
Three agents detected	<ul style="list-style-type: none"> <li>AGENT MIX advisory displayed in <b>alarm window</b></li> <li>monitor displays I/E concentrations of primary agent</li> </ul>	<ul style="list-style-type: none"> <li>AGENT MIX advisory displayed in <b>agent parameter box</b></li> <li>no agent or MAC data displayed</li> </ul>

## **If external monitors will not power up...**

*Please check the following items before calling for technical assistance:*

- Verify that the anesthesia machine is plugged in to a live AC receptacle.
- Ensure that the external monitor plug is fully engaged with the convenience outlet on the anesthesia machine or associated power strip.
- Ensure that the power strip is plugged into a live AC receptacle and not into the 2.5 amp convenience outlet on the anesthesia machine.
- Verify that all of the anesthesia machine circuit breakers, located on the lower rear section of the machine, are engaged (pushed in). If there are any disengaged breakers (popped out), the cause of the fault should be investigated.

*If you have checked all of the above and your external monitor still does not power up, please refer to the operator's manual for that device and follow the manufacturer's instructions.*

# If the ventilator is not responding as expected...

*Please check the following items before calling for technical assistance:*

**Note:** *Remember to confirm all ventilator selections by pressing the selector/confirmation knob.*

- Ensure that the Y-piece is not occluded.
- Ensure that you have the ventilator in the mode of ventilation you prefer and that it is not in the Standby mode.
- Note the message on the ventilator control panel:
  - If the message is **Pressure Limit**, verify appropriate Pmax setting; check for cause of high airway pressure.
  - If the message is **Fresh Gas Low**, verify appropriate fresh gas flow rate; check for leaks at vaporizer mount, reservoir bag, or elsewhere in the system.
  - If the message **Equipment fault** is displayed, followed by **Fault Nr. xxx**, the ventilator has detected an internal fault and switched to Safe State, where only manual ventilation is possible. Complete the case with manual ventilation and then contact an authorized representative of DrägerService.
  - If the message **Breath Sys. Fail** is displayed, or **Resetting Piston** along with a “Negative Pressure Has Been Applied” window on the Narkomed 6000 Series system monitor, excessive vacuum has been applied to the breathing system. To recover from excessive vacuum, take the following actions:
    1. Immediately remove the source of vacuum.

2. Attempt manual ventilation by pressing the **[Manual/Spontaneous]** button if applicable, press the selector/confirmation knob, and squeeze the breathing bag.
3. If manual ventilation is not possible, continue ventilation using a backup manual ventilation device.
4. After ensuring that the patient is adequately ventilated, lift the Divan tabletop and rotate the locking lever for the breathing system and piston assembly.
5. Grasp the handle of the breathing system and pull it to the left to ensure that the compact breathing system separates from the piston. You may hear a whooshing sound as the vacuum is relieved.
6. Re-latch the compact breathing system.
7. Fit the patient connection of the Y-piece to the plug on the bag mount arm and perform a leak and compliance test before reconnecting to the patient.

**Note:** The “Negative Pressure Has Been Applied” window on the Narkomed monitor will prompt you through these same steps.

**Note:** Pressing the ventilator override switch will not release vacuum from the compact breathing system.

**Note:** To avoid this situation, refer to “Use of Suction with the Narkomed 6000” in section 8 of the Narkomed 6000 Operator’s Instruction Manual or to “Use of Suction with the Narkomed 6400” in section 8 of the Narkomed 6400 Operator’s Instruction Manual.

- If no message is displayed, verify if ventilator override has been activated. If the LED is lit, only manual ventilation is possible. Complete the case with manual ventilation and then determine the reason why ventilator override was active. To reset override, turn the main power switch of the anesthesia machine to **STANDBY** and then back to **ON**.
- If in Volume or SIMV mode and measured tidal volume (Vt) is lower than desired, verify that the Vt is set properly on the ventilator; check for airway leaks or for the appearance of the Breathing Hose Compliance Limit dialog box. (See page 7 for further information.)
- If in Pressure mode and measured peak pressure is significantly lower than desired, verify that Pset is adjusted appropriately and flow is set high enough to achieve Pset; check for airway leaks.

**Note:** To test the airway for leaks, disconnect the patient, place the ventilator in Standby status, occlude the Y-piece, and press the **[Test]** button. The ventilator will automatically perform a leak test and display the rate of leakage.

To test the total breathing system for leaks, perform the Total Breathing System Leak Test described the Preuse Checkout section of the Narkomed 6000 Operator's Manual or the Narkomed 6400 Operator's Manual.

*If you have checked all of the above items and the ventilator is still not functioning, follow the directions on the back cover of this guide.*

## **If the ventilator bar graph does not move completely to the right of the display during inspiration...**

### ***In Volume Mode:***

**Note:** *In the volume mode of ventilation, the bar graph represents the percentage of preset tidal volume being delivered.*

*Please check the following before calling for technical assistance:*

- Verify that the pressure limit control (Pmax) is set high enough to allow the full tidal volume to be delivered.

### ***In Pressure Mode:***

**Note:** *In the pressure mode of ventilation, the bar graph represents the percentage of the total available piston volume (max. 1400 ml) being delivered and may not reach 100%.*

*Please check the following before calling for technical assistance:*

- Verify that the inspiratory flow (Flow) control is set high enough to allow preset pressure to be achieved.

*If the problem persists, follow the directions on the back cover of this guide.*



## **If your anesthesia system is generating inadvertent PEEP...**

*Please check the following items before calling for technical assistance:*

- Verify that the PEEP control is set to the desired value.
- Verify that the breathing hoses are not kinked or obstructed with water or other possible obstructions.
- Ensure that the scavenger hoses do not contain excessive moisture.

*If the problem persists, follow the directions on the back cover of this guide.*

## If the piston cylinder unit cannot be removed for cleaning...

*Please check the following items before calling for technical assistance:*

- If the Narkomed 6000 Series system power switch is set to **On**, set the ventilator to Standby status. The piston cylinder unit should not be removed when the ventilator is in any other mode.
- If the Narkomed 6000 Series system power switch is set to **STANDBY** and the piston cylinder cannot be removed easily, the piston is probably not in its removal position. Turn the system power switch to **ON** and wait until the ventilator is in Standby status to remove the piston cylinder unit.

- 

*If the unit is in Standby and the piston cylinder unit still cannot be removed, follow the directions on the back cover of this guide.*

## **If the piston cylinder unit cannot be reinstalled into the ventilator...**

*Please check the following items before calling for technical assistance:*

- Verify that the unit is assembled correctly. If the piston cylinder unit is not assembled correctly after cleaning, it may not fit into the ventilator housing.

*If the unit appears to be assembled correctly and still cannot be reinstalled, follow the directions on the back cover of this guide.*

# Common ventilator messages and responses

*The following messages may be displayed by the ventilator during ventilator self-test and during operation. Messages and responses are listed below.*

## **APL = 30 cmH<sub>2</sub>O ?**

Verify that the APL valve is set to Man position and the value is set to 30 cmH<sub>2</sub>O. Confirm by pressing selector/confirmation knob.

## **APL -- >MAN ?**

Verify that the APL valve is set to Man position and the value is set to 30 cmH<sub>2</sub>O. Confirm by pressing selector/confirmation knob.

## **Breath Sys. fail**

If displayed during power-up self-test and number 121 appears to the left of the message, set APL valve to Man position and adjust the value to 30 cmH<sub>2</sub>O; then press selector/confirmation knob to rerun test. Otherwise, replace compact breathing system.

If displayed during normal operation, strong suction has been applied to the patient airway. Follow directions in the Negative Pressure Dialog Box on the monitor or under “If the ventilator is not responding as expected...” on page 17 of this guide.

## **Breath sys lock?**

Verify that the compact breathing system assembly is properly locked into the ventilator; reseal and lock, if necessary. Confirm by pressing selector/confirmation knob.

## **Check Monitor**

Message indicates that internal communication is not maintained with the system monitor. Complete the case and then contact an authorized representative of DrägerService.

## **COMPLETE TEST**

Set the anesthesia machine main power switch to **STANDBY**, wait until the ventilator display is no longer illuminated, turn the main power switch to **ON**, and do not attempt to bypass ventilator power-up self-test.

## **Compliance test**

Displayed during compliance portion of leak and compliance test. No operator response is required.

## **Equipment fault**

Ventilate patient as in Manual Mode. The ventilator buzzer can be silenced by pressing the selector/confirmation knob. Contact an authorized representative of DrägerService before using the Narkomed 6000 Series system for another case.

## **Exp.press.high**

This message is displayed at the end of expiration if the airway pressure significantly exceeds the preset PEEP value. Corrective action:

- Check for possible sources of occlusion or restriction to the expiratory limb of the patient circuit or scavenger system.
- Open the breathing system to relieve pressure, if necessary.
- If operating in Manual/Spontaneous Mode, switch to Volume or Pressure Mode and then contact an authorized representative of DrägerService.
- If error persists, activate the ventilator override switch to complete the case, and then contact an authorized representative of DrägerService.

## **Fault Nr. “ ”**

Message follows **Equipment fault** message. Report number to an authorized representative of DrägerService.

## **Fresh gas low**

Displayed during expiration when breathing bag is not inflated enough to maintain airway pressure. Increase the fresh gas flow rate to clear this message.

## **Fresh gas off?**

Verify that all fresh gas flow control knobs are closed. Confirm by pressing selector/confirmation knob.

## Insert piston

Message follows **Remove piston** message. Reinsert piston and relatch with breathing system as usual. Press selector/confirmation knob to continue.

## Insp. Valve?

System is checking for proper operation of the inspiratory valve to isolate location of leak. Inspect inspiratory valve disk and seat for integrity and cleanliness. Confirm by pressing the selector/confirmation knob.

## Invalid

Displayed when a button has been pressed at an inappropriate time, such as pressing **[Test]** while not in Ventilator Standby status, any button except Ventilator **[Standby]** during a leak and compliance test, or any mode button twice in succession. Remove pressure from button and wait for message to clear.

## Keyboard error

Remove pressure from all ventilator control panel buttons. If error persists, activate the ventilator override switch and manually ventilate to complete the case; then contact an authorized representative of DrägerService.

## last cancel

Displayed when the operator presses a button to cancel self-test for the 10th time since the last complete self-test. Note that the ventilator power-up self-test cannot be bypassed on the next system reset.

## Leak = “ ” mL/min

Value displayed is the leak rate measured in subsystems 1 and 2.

- If leak rate is <175 mL/min, message is displayed momentarily. No operator response is required.
- If leak rate is >175 mL/min during power-up self-test, message is displayed until the selector/confirmation knob is pressed to continue. Ventilator will attempt to isolate source of leak to subsystem 1 or 2, and then offer the user the option to either correct the leak and rerun the test or accept the leak.
- If leak rate is >175 mL/min during leak and compliance test, the message is displayed until the selector/confirmation knob is pressed to continue. Ventilator will then return to Standby status. The user must decide whether to correct the leak and rerun the test or accept the leak.

## Leak accepted?

Displayed during the self-test, this message prompts the operator to press the selector/confirmation knob to accept the leakage and continue with the self-test.

**Note:** The ventilator display will toggle between **Rerun leak test?** and **Leak accepted?** until one or the other is selected by pressing the selector/confirmation knob.

## Leaktest, Manual

Displayed during power-up self-test block 9. No operator response required.



## **Leaktest, V Mode**

Displayed during leak portion of leak and compliance test.  
No operator response required.

## **Manual Leak= “ ”**

Displayed during power-up self-test if a significant leak is measured in subsystem 3. Message is displayed until the selector/confirmation knob is pressed to continue. Ventilator will then offer the user the option to either correct the leak and rerun the test or accept the leak.

## **Manual/Spont. ?**

Press knob to confirm new operating mode. If new mode is not confirmed within approximately 10 seconds, display reverts to previous message, flashing LED for new mode button is extinguished, and ventilation continues in previous mode.

## **Max. Insp. flow**

Parameter value cannot be changed further without exceeding inspiratory flow rate limit of ventilator. Reduce preset tidal volume or rate, or increase I:E ratio.

## **Pediatric hoses?**

This message is displayed when the tidal volume ( $V_t$ ) is changed from  $>200$  ml to  $\leq 200$  ml to prompt user to verify that low compliance hoses are being used and to run the leak and compliance test if hoses have been changed.

## **Piston fail / Piston seal leak**

Reseat piston assembly and press selector/confirmation knob to repeat test. If message recurs, disassemble piston assembly (see section 10 of the Narkomed 6000 or 6400 Operator's Manual) and inspect the roller diaphragm for improper assembly or damage which may cause a leak.

## **piston test**

This message is displayed every 10 minutes during mechanical ventilation. This test checks for large leaks in the patient circuit by extending the inspiratory cycle for an additional 1.3 seconds and verifying that pressure within the circuit is being maintained. No operator response is required.

## **Pressure limit**

Displayed when operating in Volume Mode or SIMV Mode but limited by Pmax. Increase Pmax or decrease tidal volume to clear this message.

## **Pressure Mode ?**

Press knob to confirm new operating mode. If new mode is not confirmed within approximately 10 seconds, display reverts to previous message, flashing LED for new mode button is extinguished, and ventilation continues in previous mode.

## **Pressure release**

Displayed when the airway pressure is sustained at  $>30$  cmH<sub>2</sub>O. Switch the APL to Spont position if a patient is attached; or switch the ventilator to Ventilator Standby status if no patient is attached.

## **P-Sensor fault**

Displayed when a pressure sensor fault is detected. Verify that the airway pressure hose is undamaged and properly connected to the compact breathing system. Otherwise, complete case in Manual Mode, and then contact an authorized representative of DrägerService.

## **Raise Insp. flow**

Displayed when operating in Pressure Mode, but Pset is not achieved due to low inspiratory flow rate. Increase the inspiratory flow rate.

## **Reduce I:E Ratio**

Rate cannot be increased further without exceeding expiratory time limit of ventilator. Reduce I:E ratio.

## **Reduce Rate**

Parameter value cannot be increased further without exceeding limits of ventilator. Reduce preset Rate.

## **Reduce Volume**

Rate cannot be increased further without exceeding minute volume limit of ventilator. Reduce preset tidal volume.

## **Remove piston**

May appear during self-test if piston motion is not detected. Remove piston assembly and inspect the assembly for improperly assembled roller diaphragm. Press selector/confirmation knob to continue.

## **Rerun leak test?**

Displayed during the self-test, this message prompts operator to press the selector/confirmation knob when the leak has been eliminated. The unit will then retest the system for leaks.

## **Resetting Piston**

The ventilator is performing an internal reset, and should continue to ventilate within 15 seconds. Otherwise, look for Negative Pressure Dialog Box on monitor and follow the provided directions.

## **Self-test**

Displayed during power-up self-test. No operator response required.

## **Service Nr. “ ”**

Message indicates a minor fault; the ventilator is conditionally functional. Record the service number and resume operation by pressing selector/confirmation knob. Complete the case and then report number to an authorized representative of DrägerService.

## **SIMV Mode ?**

Press knob to confirm new operating mode. If new mode is not confirmed within approximately 10 seconds, display reverts to previous message, flashing LED for new mode button is extinguished, and ventilation continues in previous mode.

## **Standby ?**

Press knob to confirm new operating mode. If new mode is not confirmed within approximately 10 seconds, display reverts to previous message, flashing LED for new mode button is extinguished, and ventilation continues in previous mode.

## **Subsystem “ ” Leak**

Look for source of leak in subsystem 1, 2, or 3 as indicated (refer to page 1 for details). Press selector/confirmation knob to repeat test.

## **Supply pressure?**

Check that oxygen pipeline or cylinder is supplying gas to the machine at an adequate pressure.

## **Testpress. error**

Displayed during a leak test when 30 cmH<sub>2</sub>O pressure cannot be maintained in the patient circuit. Verify that the Y-piece is occluded and the airway pressure hose is properly connected to the compact breathing system. Check for a large leak in the patient circuit, then repeat test.

## **Valve disk fail**

Verify that the compact breathing system assembly is properly assembled and locked into the ventilator. Press the selector/confirmation knob to continue. If message recurs, replace compact breathing system.

## **Volume Mode ?**

Press knob to confirm new operating mode. If new mode is not confirmed within approximately 10 seconds, display reverts to previous message, flashing LED for new mode button is extinguished, and ventilation continues in previous mode.

## **xCancel Test**

This message is displayed when the operator presses a button to cancel the self-test. The digit preceding the “x” indicates the number of times the self-test has been bypassed since the last complete self-test.

## **Ypiece occluded?**

Verify that the Y-piece is occluded. Confirm by pressing selector/confirmation knob.

## **Y-piece open?**

Verify that the Y-piece is open. Confirm by pressing selector/confirmation knob.





A Dräger and Siemens Company

If you are unable to resolve your problem using this guide, please call your authorized representative of DrägerService, or call DrägerService directly at:

**1-800-543-5047**

Please have the following information available when calling for assistance:

Description of the problem:\_\_\_\_\_

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